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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,715	12/29/2005	Martin Hermann Weggen	3135-052069	9810

28289 7590 04/14/2008
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EXAMINER

SMOOT, STEPHEN W

ART UNIT	PAPER NUMBER
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2813

MAIL DATE	DELIVERY MODE
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04/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,715	Applicant(s) WEGGEN ET AL.	
	Examiner Stephen W. Smoot	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11-14-07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to application papers received on 08 July 2005, which includes a preliminary amendment that has been entered.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "the release means" in lines 1-2; and

Claim 23 recites the limitation "the second mould part" in line 2.

There is insufficient antecedent basis for these limitations in claim 23.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, because it depends on claim 23.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 18-22, 25, 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Peters et al. (WO 01/17012 A1 – from applicant's IDS).

Referring to Figs. 1-4 and page 4, line 16 to page 5, line 26, Peters et al. disclose an encapsulating device (1, 15) for encapsulating an electronic component (6) mounted on a carrier (5) with encapsulating material (7, 13, 14). Further, the electronic component (6) component can be a semiconductor as indicated on page 1, lines 3-4. The device (15) corresponding to the embodiment of Fig. 4 includes two displaceable co-acting upper mold (2) and lower mold (16, 17) parts that can be closed, as shown in Fig. 3, to define a cavity (4) for encapsulating the electronic component (6) with encapsulating material (14). The lower mold part (16, 17) includes a sleeve (16) rigidly linked with a holder strip (17). The holder member (17) further includes a chamfered end (11 in Fig. 2) (i.e. a projecting edge) that shields part of the carrier (5). The carrier (5) is supported on a third mold part (3) that is displaceable with respect to the lower mold part (16, 17) so that the shielded portion of the carrier (5) can be pressed against

the chamfered end (11 in Fig. 2) when the mold is in a closed position for encapsulating as shown in Fig. 3. The encapsulating device (1, 15) includes a plunger (8, 9) for feeding liquid encapsulating material (13, 14) over the chamfered end (11 in Fig. 2) and into the mold cavity (4) via a runner (12) corresponding to the holder member (17). After partial curing of the liquid encapsulating material (13, 14), the upper mold part (2) and the third mold part can be moved apart to release the encapsulated package (5, 6, 14).

These are all of the structural limitations as set forth in claims 18-22 of the applicant's invention.

Regarding claims 25, 27-28 and also referring to page 3, line 17 to page 4, line 3, Peters et al. disclose an encapsulating method that includes placing the carrier (5) on the third mold part (3) (see Fig. 4), urging (i.e. clamping) part of the carrier (5) against the holder strip (17) (see Fig. 2), closing the upper mold part (2) against the holder strip (17) to define the mold cavity (4) (see Fig. 3), and feeding liquid encapsulating material (13, 14) into the cavity (4) (see Fig. 3). After at least partial curing of the encapsulating material (13, 14), the upper mold part is moved back to open the mold assembly and the holder member (17) is displaced relative to the third mold part (3) to release the carrier (5).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al. (WO 01/17012 A1 – from applicant's IDS) as applied to claim 18 above, and further in view of Yoshihiro (JP 7-205214 A – from applicant's IDS).

As shown above, Peters et al. anticipate claim 18 of the applicant's invention. However, Peters et al. lack the further limitations to claim 18 as set forth in claims 23-24, which are at least one pressure element arranged in a mold part (the limitation of claim 23) and the pressure element being connected to a control member (the limitation of claim 24). Yoshihiro teaches a mold assembly that utilizes a spring in an upper mold part to separate a sealed package from a runner (see JPO abstract).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Peters et al. and Yoshihiro in order to use a spring, as taught by Yoshihiro, in the upper mold part of Peters et al. to separate the at least partially cured encapsulating material (14) corresponding to the cavity (4) from the at least partially cured encapsulating material (13) corresponding to

the runner (12). Yoshihiro recognizes that a cutting step can advantageously be combined with the step of opening the mold assembly and, thereby, be eliminated as a separate step that would otherwise be necessary after the molding operation.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al. (WO 01/17012 A1 – from applicant's IDS) as applied to claim 25 above, and further in view of Shigeya (JP 7-80895 A – from applicant's IDS).

As shown above, Peters et al. anticipate claim 25 of the applicant's invention. However, Peters et al. do not expressly teach or suggest the step of rotating the carrier relative to the projecting edge, which is the further limitation to claim 25 as set forth in claim 26 of the applicant's invention. Shigeya teaches a molding method that features cutting by rotating molded products relative to runner portions (see JPO abstract).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Peters et al. by rotating the carrier relative the holder strip, as taught by Shigeya, because Shigeya recognizes that rotating is one known way to separate a molded product from a runner by cutting.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shintai, Chia et al., and Tsuruta teach encapsulation apparatuses and methods for encapsulating semiconductor devices.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on Monday to Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen W Smoot/
Primary Examiner
Art Unit 2813

SWS